

exist some differences in the timing of onsets and terminations. Nevertheless, there is now strong evidence that these geomagnetic events are global features.

THERMAL EVOLUTION OF NORTH ATLANTIC SURFACE WATER MASSES OVER THE LAST 200 KA- GEOCHEMICAL AND MICROPALAEONTOLOGICAL INDICATIONS

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The geochemical and paleontological investigations of deep sea sediment cores located along a N-S-trending profile in the northernmost North Atlantic and the Norwegian-Greenland Sea indicate new aspects in the paleoceanographic development of the Norwegian Current.

Geochemical analyses on fossil tests of the planktonic foraminifer *Neogloboquadrina pachyderma* sin. reveal that magnesium in foraminiferal tests reflects relative surface water temperature changes. Since the incorporation is uninfluenced by salinity changes of surface waters, magnesium provides an exclusively "thermal" signal. Studies on coccoliths in the Norwegian-Greenland Sea reveal that abundances strongly vary in accordance to climatic changes. Coccoliths are mainly restricted to interglacial core sections, indicating variable oceanographic regimes through time.

The combination of quantitative coccolith data and magnesium in foraminiferal tests makes a differential paleoceanographic reconstruction of the Norwegian Current possible. Significant magnesium variations in *N. pachyderma* sin. during isotopic stages 6 and 3 characterize a more variable surface-water circulation than previously assumed. At the beginning of stage 5, the drastic increase of magnesium concentrations accompanied by a successive appearance of various coccolith species indicates the starting influx of relatively warm North Atlantic surface water masses. In accordance to coccolith data, magnesium data indicate an establishment of the Norwegian current even during substages 5.3 and 5.1, whereas during substages 5.4 and 5.2, a drastic cooling of surface waters and/or a complete reduction of inflowing North Atlantic surface waters occurred. For the glacial stages 4 and 2, the interruption of inflowing surface waters has to be considered due to very low magnesium concentrations. The climatic change to the Holocene is reflected both in a drastic increase in magnesium concentrations and high coccolith abundances indicating a severe influx of relatively warm North Atlantic surface water masses. During Termination I_A, these surface waters presumably reached Vøring Plateau, but established in Fram Strait not before Termination I_B.

SEDIMENTS IN THE ARCTIC SEA ICE

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Due to its exposed position and the unequal relationship between area and mean thickness, the sea-ice cover is expected to react sensitively on even small environmental changes. The importance of sedimentary inclusions in the Arctic ice cover on ablation processes, and on albedo effects related to such changes, is still not sufficiently known. Intensive studies on sediment inclusions in the